Project: Hopi HAMP Compared to Treatment System Option

Prepared by: Mike Luecker

Date: 8/31/17

	Treatment - Improved Distribution System with Meters Includes Valve/Meters and Storage/Boosters 2nd Mesa			
	FMCV	2nd Mesa	Shungopovi	TOTAL
Construction Costs	$3,187,000	$2,852,000	$1,548,000	$7,587,000
Non-Construction Costs	$1,236,000	$1,085,000	$601,000	$2,922,000
Total Estimated Capital Cost	**$4,423,000**	**$3,937,000**	**$2,149,000**	**$10,509,000**

	Treatment - Unimproved Distribution System & No Meters Comparison to HAMP (no distribution system improvements)			
	FMCV	2nd Mesa	Shungopovi	TOTAL
Construction Costs	$1,541,000	$2,223,000	$913,000	$4,677,000
Non-Construction Costs	$623,000	$850,000	$364,000	$1,837,000
Total Estimated Capital Cost	**$2,164,000**	**$3,073,000**	**$1,277,000**	**$6,514,000**

Project: FMCV Treatment System w/Existing Distribution System Upgrades (Meters & Valve replacements)
Prepared by: Mike Luecker
Date: 8/31/17

Construction Costs

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE ($)	Includes System Upgrades TOTAL ESTIMATED COST	Compare to HAMP TOTAL ESTIMATED COST
Arsenic Treatment Facility, ATF (w/ metal building, site work, site piping, valves, flow meters, de-sander, power drop, telemetry and back-up generator)	EA	2	$600,000	$1,200,000	$1,200,000
Start up assistance (Provided by Contractor/ Equipment Supplier)	LS	1	$25,000	$25,000	$25,000
6" Main from Existing 'Refurbished' Well to ATF & Connect to Existing System	LF	400	$40	$16,000	$16,000
Refurbish Existing Wells	LS	2	$150,000	$300,000	$300,000
Misc System Improvements (Water Tank Rehab, Waterline replacements, disenfection, electrical, etc)	LS	1	$1,000,000	$1,000,000	$0 - See Notes
Add/Replace existing valves throughout system	EA	100	$1,500	$150,000	$0 - See Notes
Water Meters w/Box - Residential & Commercial	EA	620	$800	$496,000	$0 - See Notes
			Construction Costs	$3,187,000	$1,541,000

Non-Construction Cost

Contingency (15%) =	$478,000	$231,000
Engineering - PER & Env doc (2%) =	$64,000	$31,000
Engineering - Detailed Design (8%) =	$255,000	$123,000
Engineering - Construction Mgmt. (10%) =	$319,000	$154,000
Legal and Administrative (2%) =	$64,000	$31,000
Equipment - O&M Support for ATF (Minor items outside Treatment contract) =	$50,000	$50,000
Sub-total	$1,230,000	$620,000
Tero/Tribal Tax (0.5%)	$6,000	$3,000
Non-Construction Costs	$1,236,000	$623,000

Total Estimated Capital Cost	**$4,423,000**	**$2,164,000**

Notes:

Construction costs and all Non-Construction Costs rounded to $1,000

Increase 6" from $30 (as shown in PER) to $40 to account for gate/air valves and some pavement replacement.

Comparison to HAMP - Remove improvements to existing system.

Water Meters - Assume $800 since there are no existing meters, so will require more time/$ as compared to replacing existing.

Add/replace valves throughout system - This is assumption and may also cover other minor system improvements (air valves/PRV/etc)

Project: 2nd Mesa Treatment System w/Existing System Upgrades (Meters & Valve replacements, plus Booster & Storage)
Prepared by: Mike Luecker
Date: 8/31/17

Construction Costs

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE ($)	Includes System Upgrades TOTAL ESTIMATED COST	Compare to HAMP TOTAL ESTIMATED COST
Arsenic Treatment Facility, ATF (w/ metal building, site work, site piping, valves, flow meters, de-sander, power drop, telemetry and back-up generator)	EA	1	$600,000	$600,000	$600,000
Start up assistance (Provided by Contractor/ Equipment Supplier)	LS	1	$25,000	$25,000	$25,000
6" Main from 'Existing' Well to ATF & connect to existing	LF	200	$40	$8,000	$8,000
6" Main from 'New' Well to ATF	LF	5500	$40	$220,000	$220,000
6" Main from 8" to upper tank	LF	8000	$40	$320,000	$320,000
Refurbish Existing Well as back-up	LS	1	$150,000	$150,000	$150,000
New' Well as primary	LS	1	$500,000	$500,000	$500,000
Booster Station (from 8" to upper existing tank w/power drop, site work/pipring & telemetry to upper tank)	LS	1	$250,000	$250,000	$250,000
Water Storage - 75,000 gal (includes site piping/valves)	LS	1	$150,000	$150,000	$150,000
Misc System Improvements (Water Tank Rehab, Waterline replacements, disenfection, electrical, etc)	LS	1	$500,000	$500,000	$0 - See Notes
Add/Replace existing valves throughout system	EA	50	$1,500	$75,000	$0 - See Notes
Water Meters w/Box - Residential & Commercial	EA	135	$400	$54,000	$0 - See Notes
			Construction Costs	$2,852,000	$2,223,000

Non-Construction Cost

Contingency (15%) =	$428,000	$333,000
Engineering - PER & Env doc (2%) =	$57,000	$44,000
Engineering - Detailed Design (8%) =	$228,000	$178,000
Engineering - Construction Mgmt. (10%) =	$285,000	$222,000
Legal and Administrative (2%) =	$57,000	$44,000
Equipment - O&M Support for ATF (Minor items outside Treatment contract) =	$25,000	$25,000
Sub-total	$1,080,000	$846,000
Tero/Tribal Tax (0.5%)	$5,000	$4,000
Non-Construction Costs	$1,085,000	$850,000

Total Estimated Capital Cost	**$3,937,000**	**$3,073,000**

Notes:

Construction costs and all Non-Construction Costs rounded to $1,000

Increase 6" from $30 (as shown in PER) to $40 to account for gate/air valves and some pavement replacement.

Comparison to HAMP - Remove improvements to existing system.

Water Meters - While meters exist, assume they may need to be replaced or need new ones elsewhere. Assumed cost is avg.

Add/replace valves throughout system - This is assumption and may also cover other minor system improvements (air valves/PRV/etc)

Project: Shungopovi Treatment System w/Existing Distribution System Upgrades (Meters & Valve replacements)
Prepared by: Mike Luecker
Date: 8/31/17

Construction Costs

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE ($)	Includes System Upgrades TOTAL ESTIMATED COST	Compare to HAMP TOTAL ESTIMATED COST
Arsenic Treatment Facility, ATF (w/ metal building, site work, site piping, valves, flow meters, de-sander, power drop, telemetry and back-up generator)	EA	1	$600,000	$600,000	$600,000
Start up assistance (Provided by Contractor/ Equipment Supplier)	LS	1	$25,000	$25,000	$25,000
6" Main from Existing 'New' Well to ATF & Connect to Existing System	LF	200	$40	$8,000	$8,000
6" Main from 'Existing' Back up Well to ATF	LF	2000	$40	$80,000	$80,000
Refurbish Existing Well as back-up	LS	1	$150,000	$150,000	$150,000
Refurbish 'New' Well as primary	LS	1	$50,000	$50,000	$50,000
Misc System Improvements (Water Tank Rehab, Waterline replacements, disenfection, electrical, etc)	LS	1	$500,000	$500,000	$0 - See Notes
Add/Replace existing valves throughout system	EA	50	$1,500	$75,000	$0 - See Notes
Water Meters w/Box - Residential & Commercial	EA	150	$400	$60,000	$0 - See Notes
			Construction Costs	$1,548,000	$913,000

Non-Construction Cost

Contingency (15%) =	$232,000	$137,000
Engineering - PER & Env doc (2%) =	$31,000	$18,000
Engineering - Detailed Design (8%) =	$124,000	$73,000
Engineering - Construction Mgmt. (10%) =	$155,000	$91,000
Legal and Administrative (2%) =	$31,000	$18,000
Equipment - O&M Support for ATF (Minor items outside Treatment contract) =	$25,000	$25,000
Sub-total	$598,000	$362,000
Tero/Tribal Tax (0.5%)	$3,000	$2,000
Non-Construction Costs	$601,000	$364,000

Total Estimated Capital Cost	**$2,149,000**	**$1,277,000**

Notes:

Construction costs and all Non-Construction Costs rounded to $1,000

Increase 6" from $30 (as shown in PER) to $40 to account for gate/air valves and some pavement replacement.

Comparison to HAMP - Remove improvements to existing system.

Water Meters - While meters exist, assume they may need to be replaced or need new ones elsewhere. Assumed cost is avg.

Add/replace valves throughout system - This is assumption and may also cover other minor system improvements (air valves/PRV/etc)